



# State of the American Diet

*- A Selection of Data Describing Current Dietary Intakes -*

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# Interagency Collaborations

National Health and Nutrition Examination Survey, What We Eat in America  
Data Collection and Analysis

Data Collection

Nutrient Analysis

Supporting Databases

Development of Analytic  
Methods

Data Analysis



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# Overview

- Methods for dietary data collection
- Levels of dietary intake data
- Overall diet quality: Healthy Eating Index (HEI)
- Food group intakes
- Distributions of food group intakes
- Food category sources of calories and food groups

# NHANES Goals

National Center for Health Statistics of the Centers for Disease Control and Prevention

- US population-based estimates of:
  - Health conditions
  - Awareness, treatment and control of selected diseases
  - Environmental exposures
  - Nutrition status and diet behaviors
- Establish and maintain a biospecimen program



# NHANES Sampling Design

- Nationally representative
- Civilian, non-institutionalized US population
- 5,000 individuals examined annually

## Oversampled groups:

Non-Hispanic blacks

Non-Hispanic Asians

Hispanics

80+ years of age

Low income whites



# NHANES Data Collection

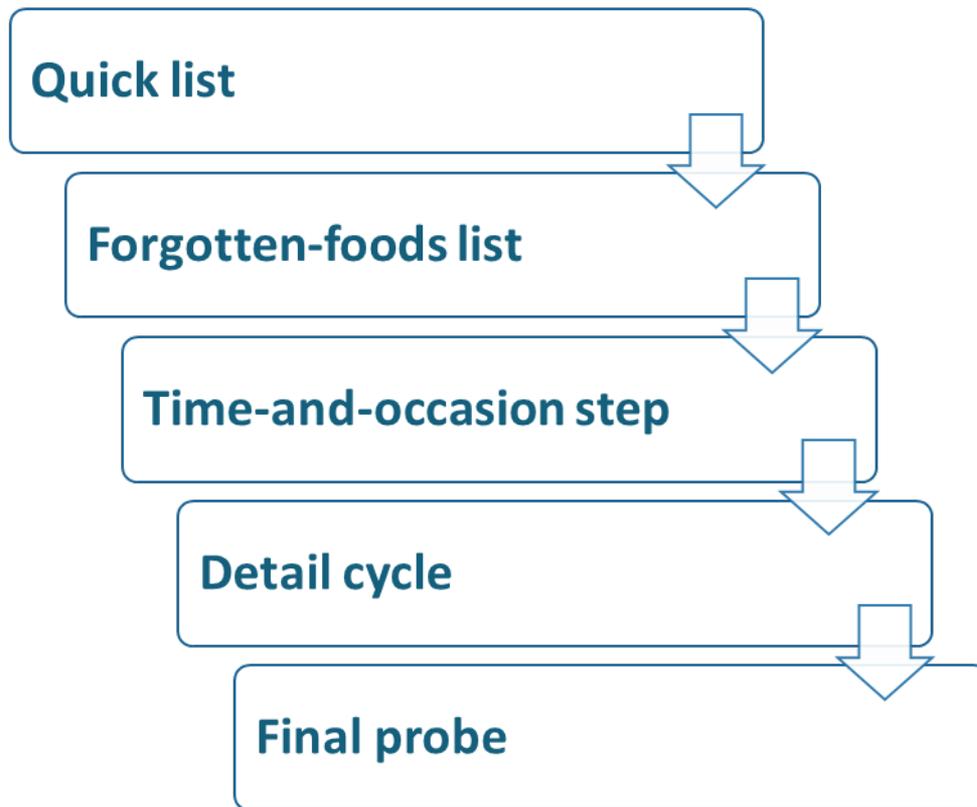
- In-person home interview
- Physical assessments in Mobile Exam Centers (MEC)
  - Physical exam measurements
  - Specialized testing
  - Lab specimen collection
  - 24 hour dietary recall interview (in person)
- Post exam assessments
  - Long term assessments (e.g. physical activity monitoring)
  - 24 hour dietary recall interview (phone)



# NHANES, What We Eat In America (WWEIA)

Interview administered 24-hour dietary recall

## USDA Automated Multiple Pass Method



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Bliss, R.M. (2004). Researchers produce innovation in dietary recall. *Agric Res* 52(6):10-12.

# WWEIA Supporting Data from USDA

## FNDDS

### Food and Nutrient Database for Dietary Studies

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- Nutrient values for ~9000 foods and beverages
- Energy and 64 nutrients

## FPED

### Food Patterns Equivalents Database

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- Converts foods and beverages in FNDDS into food group components
- 37 USDA Food Patterns components

## WWEIA Food Categories

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- foods and beverages as consumed in the American diet
- ~ 150 unique food categories

# Peanut Butter & Jelly Sandwich

select data on nutrients and food group contributions

**42302025:** Peanut butter and jelly sandwich, with regular peanut butter, regular jelly, on whole wheat bread (140 g sandwich)

## FNDDS

402 kcal

8.7 g MUFA

14 g protein

304 mg potassium

## FPED

2 oz-eq nuts & seeds

1.3 oz-eq whole grains

12.7 g oils

3.75 tsp-eq added sugars

## WWEIA Food Categories

Mixed Dish → Sandwiches → P.B. Sandwiches



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# Overall Diet Quality Healthy Eating Index (HEI)

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# Americans Do Not Follow the DGA

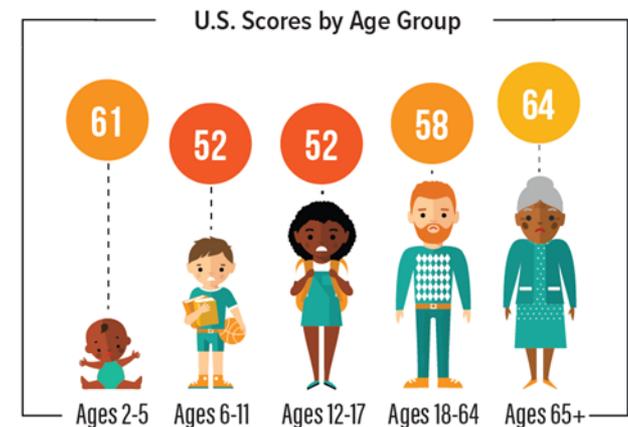
## How Healthy Is the American Diet?



59

### The Healthy Eating Index Score

shows that Americans do not align their eating choices with the Dietary Guidelines.  
(on a scale from 0-100)



Data source for Healthy Eating Index scores: What We Eat in American, National Health and Nutrition Examination Survey. (Undated data are from 2015-2016).

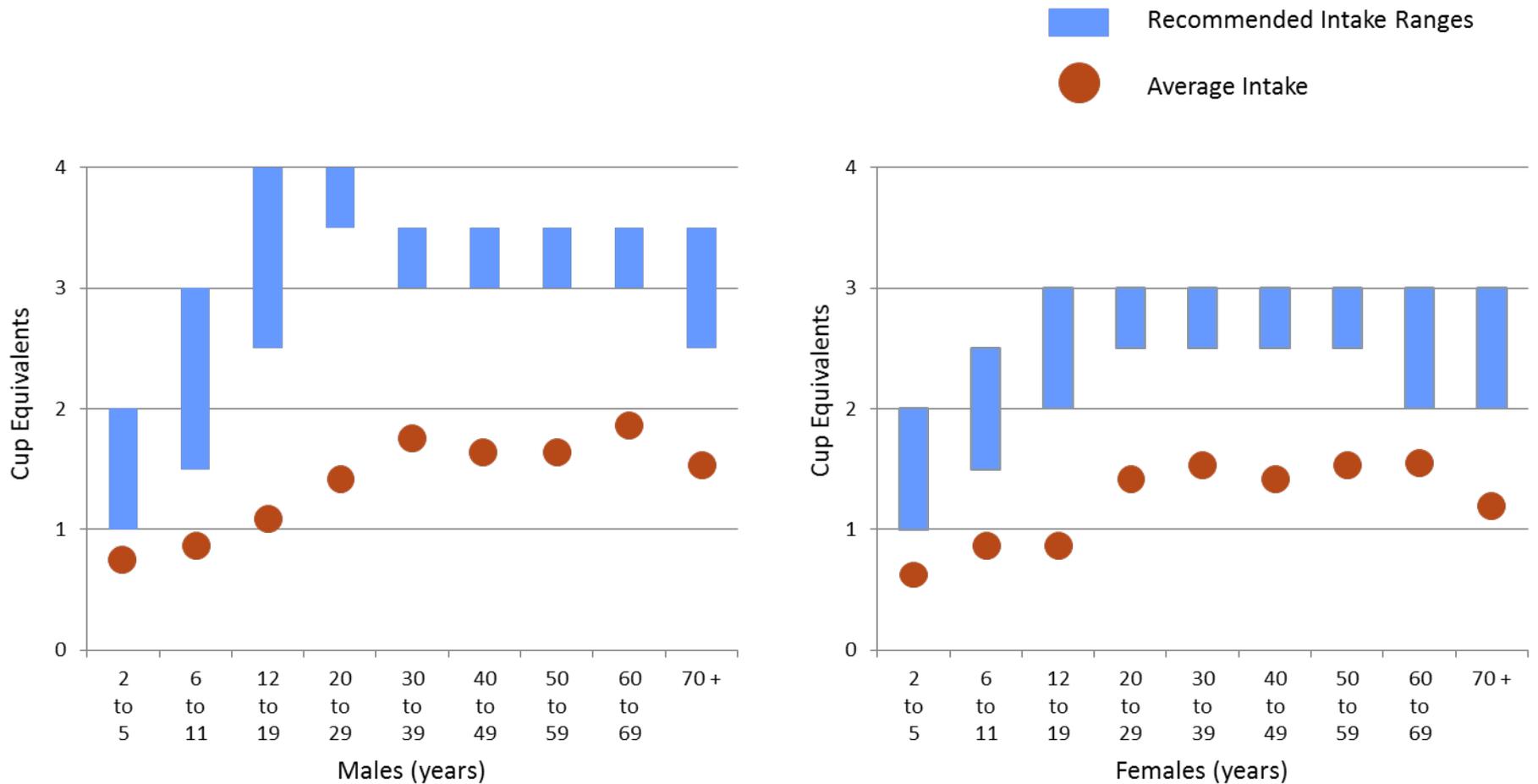


# Average Food Group Intakes Compared to Recommendations

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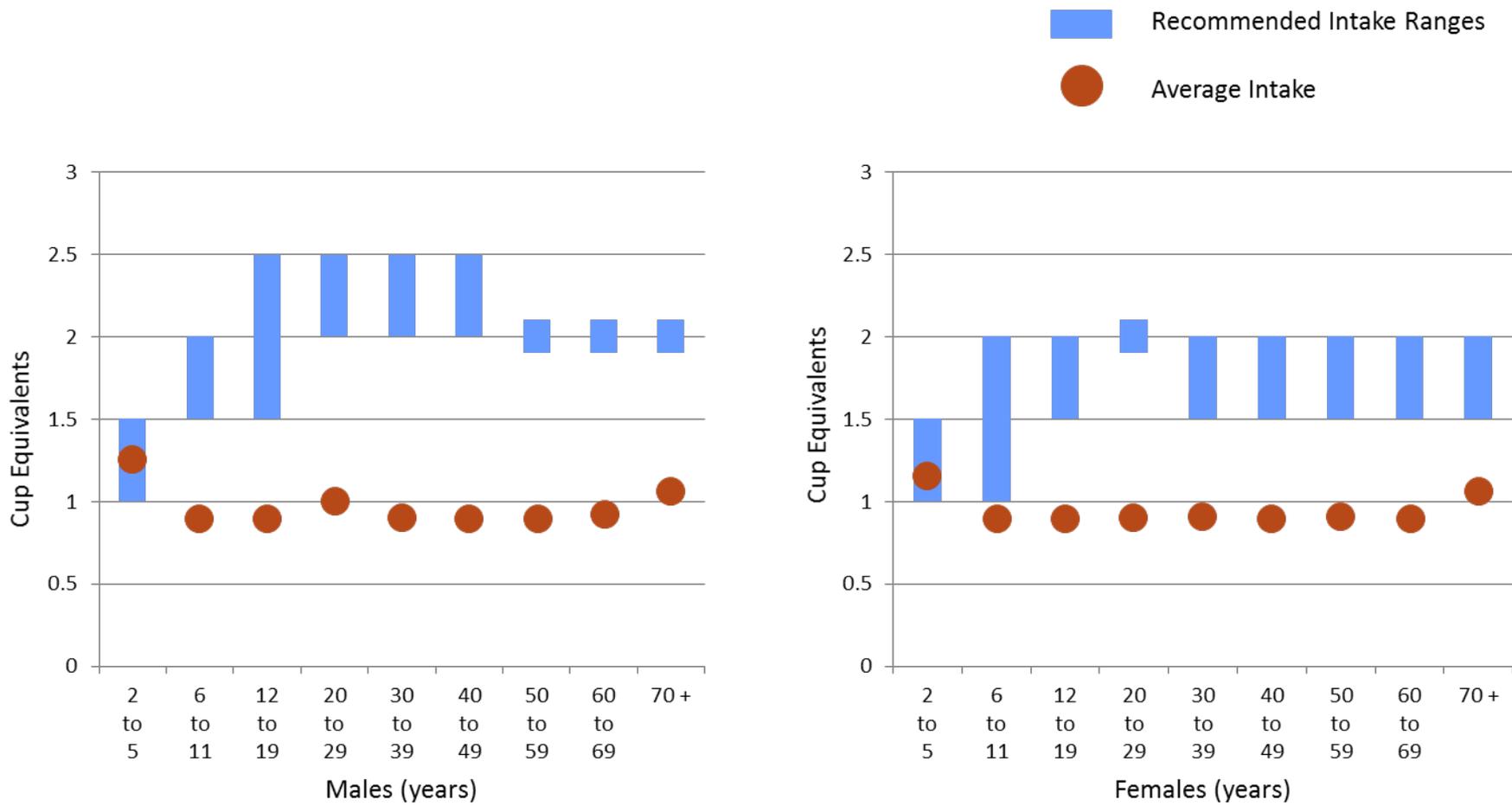


# Average Daily Vegetable Intake Compared to Recommended Intake



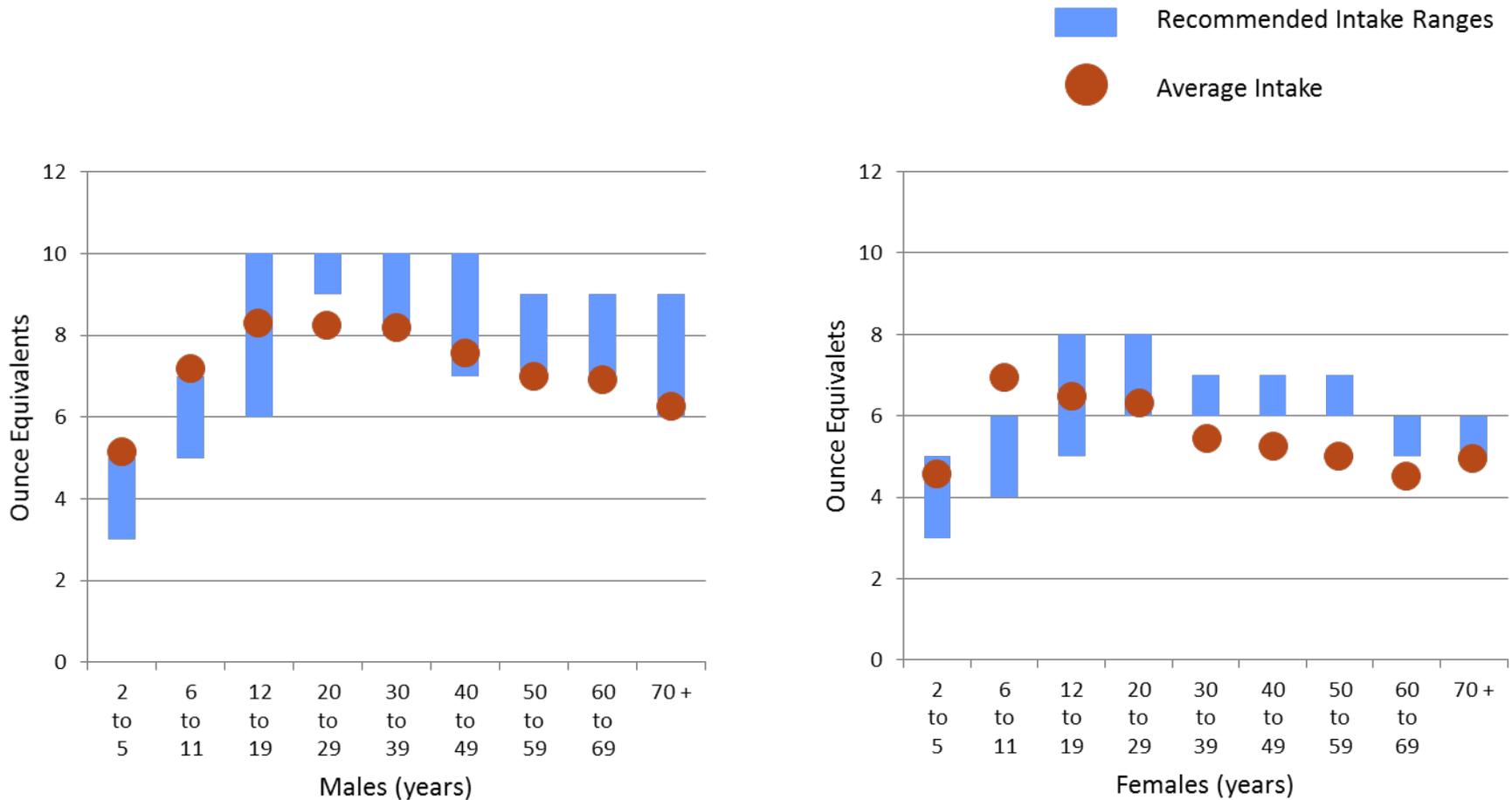
**Data sources:** What We Eat in America, NHANES 2015-2016 for average intakes by age-sex group. USDA Healthy U.S.-Style Eating Style recommended intake ranges, which vary based on age, sex, and activity level for recommended intakes. 2015-2020 Dietary Guidelines for Americans.

# Average Daily Fruit Intake Compared to Recommended Intake



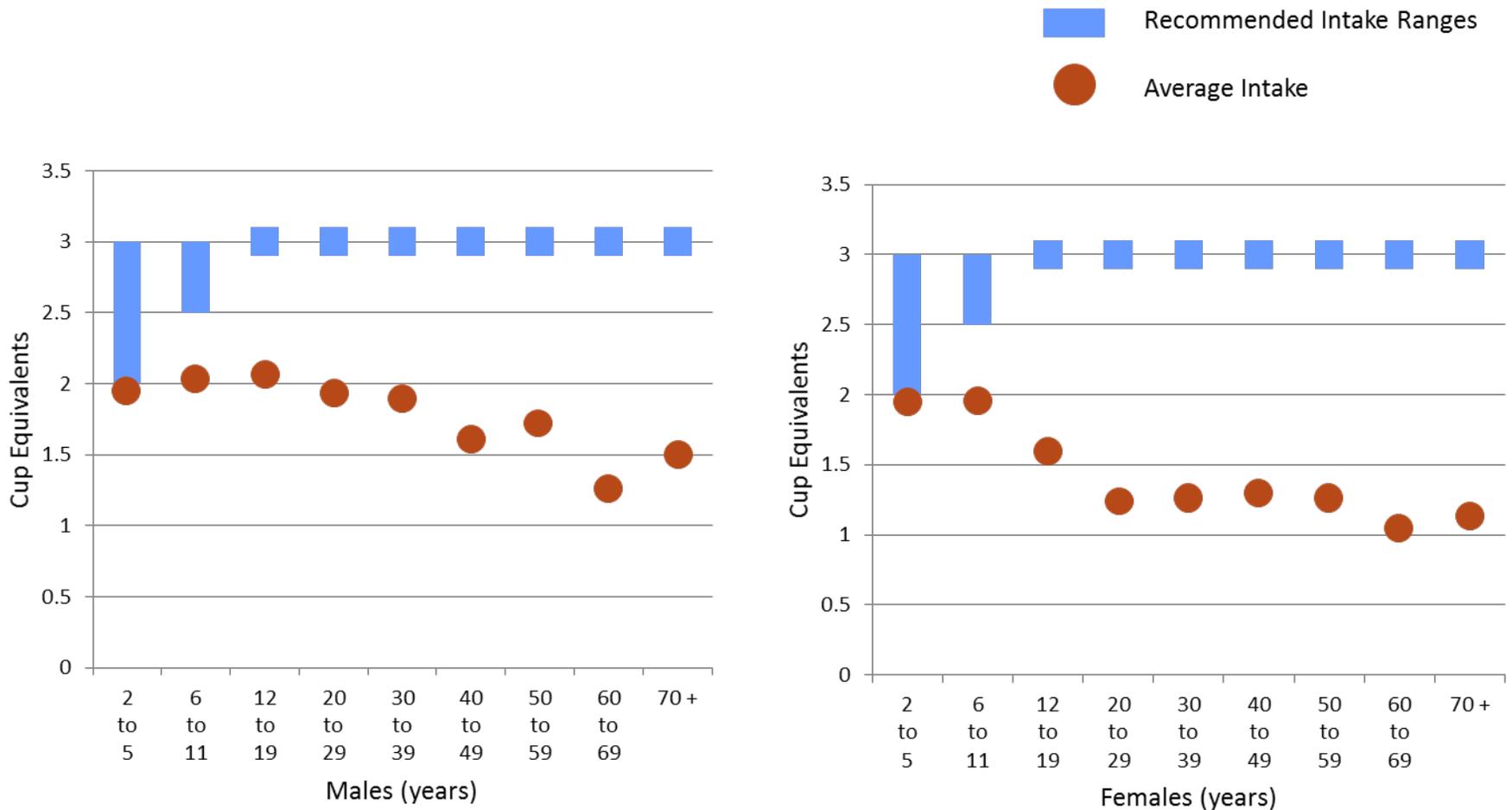
**Data sources:** What We Eat in America, NHANES 2015-2016 for average intakes by age-sex group. USDA Healthy U.S.-Style Eating Style recommended intake ranges, which vary based on age, sex, and activity level for recommended intakes. 2015-2020 Dietary Guidelines for Americans.

# Average Daily Total Grains Intake Compared to Recommended Intake



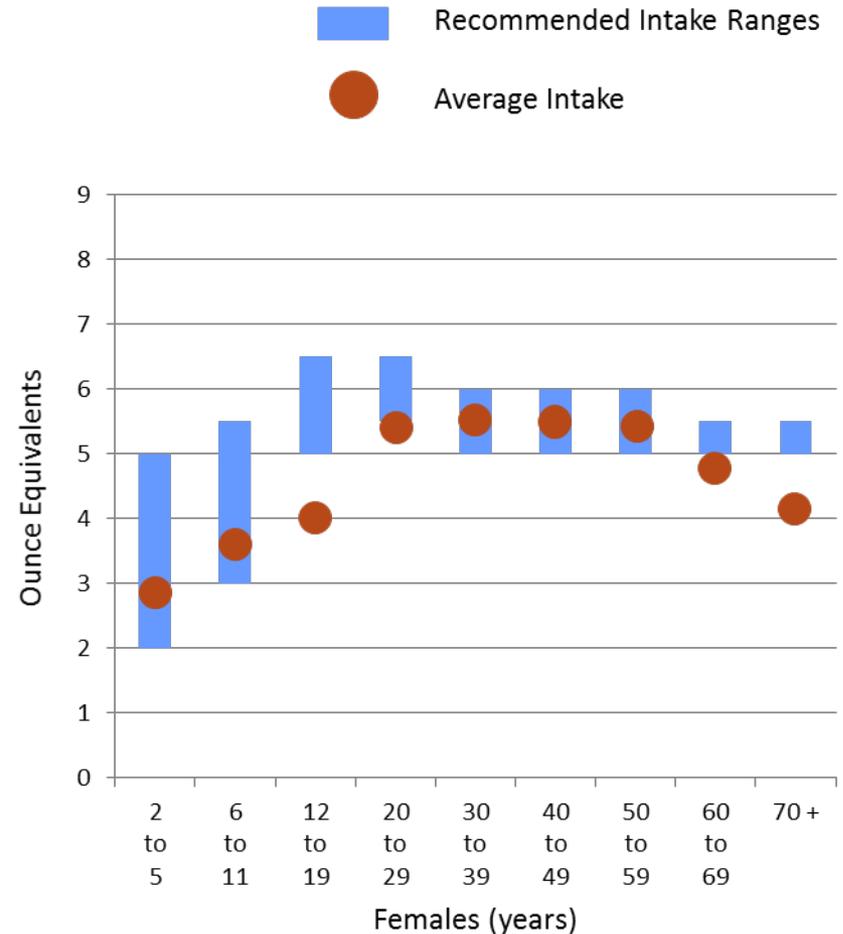
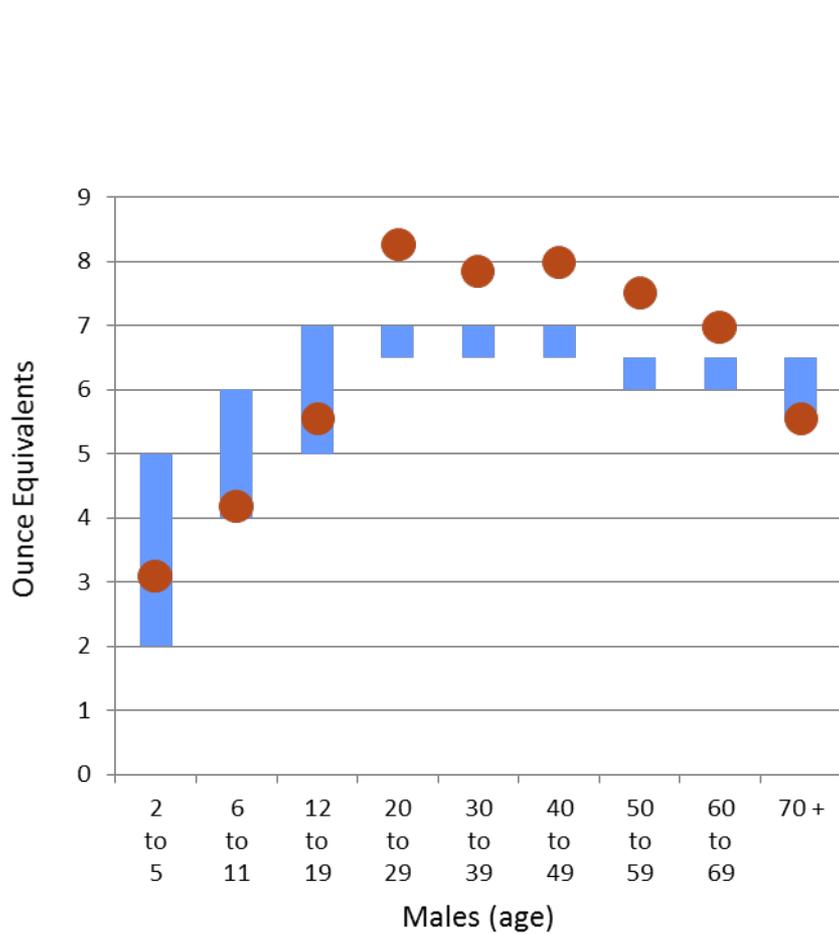
**Data sources:** What We Eat in America, NHANES 2015-2016 for average intakes by age-sex group. USDA Healthy U.S.-Style Eating Style recommended intake ranges, which vary based on age, sex, and activity level for recommended intakes. 2015-2020 Dietary Guidelines for Americans.

# Average Daily Dairy Intake Compared to Recommended Intake



**Data sources:** What We Eat in America, NHANES 2015-2016 for average intakes by age-sex group. USDA Healthy U.S.-Style Eating Style recommended intake ranges, which vary based on age, sex, and activity level for recommended intakes. 2015-2020 Dietary Guidelines for Americans.

# Average Daily Protein Foods Intake Compared to Recommended Intake



**Data sources:** What We Eat in America, NHANES 2015-2016 for average intakes by age-sex group. USDA Healthy U.S.-Style Eating Style recommended intake ranges, which vary based on age, sex, and activity level for recommended intakes. 2015-2020 Dietary Guidelines for Americans.



# Average Food Group Intakes Changes Over Time

2003-2004 to 2015-2016

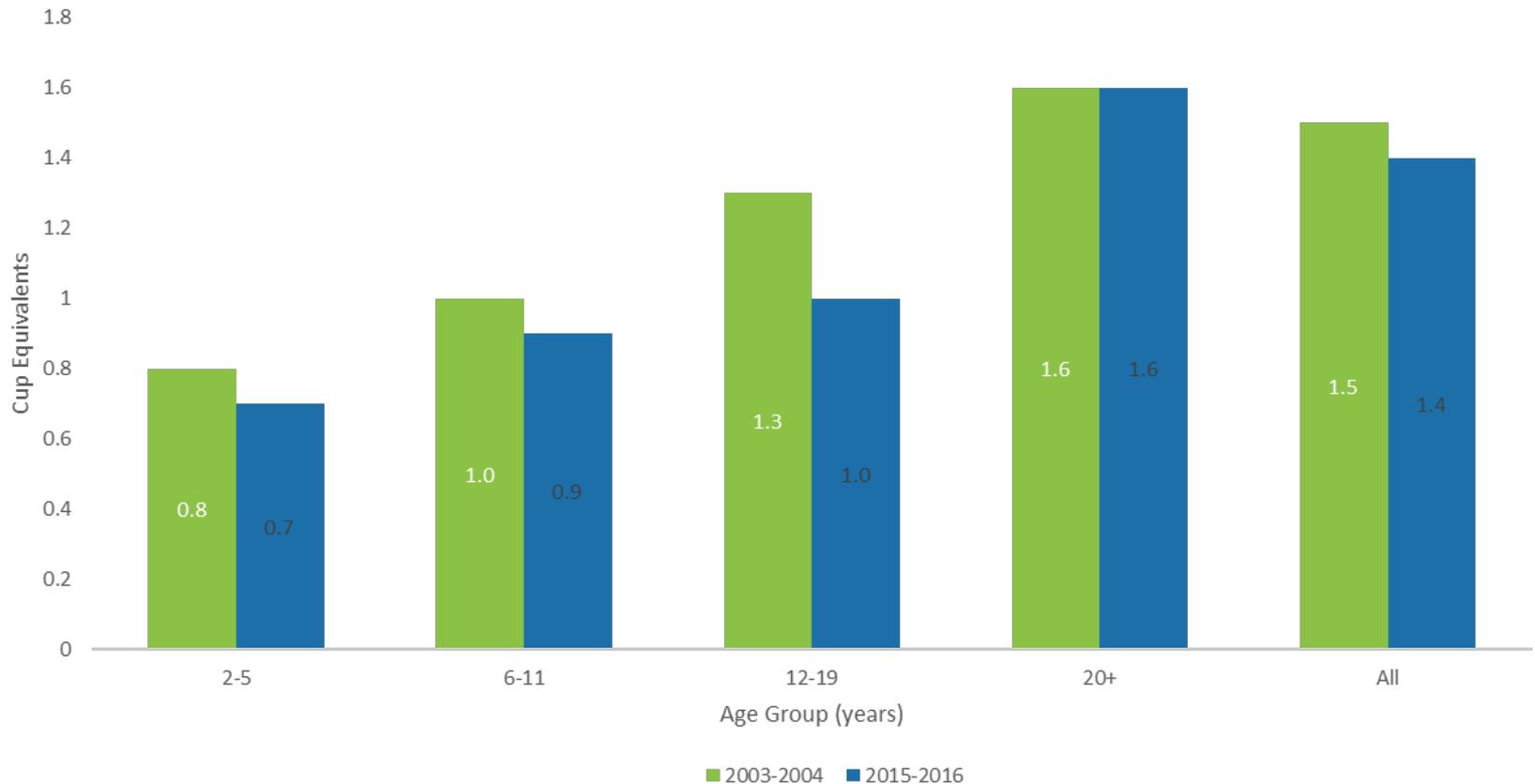
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Bowman SA, Clemens JC, Friday JE, Schroeder N, Shimizu M, LaComb RP, and Moshfegh AJ.  
Food Patterns Equivalents Intakes by Americans: What We Eat in America, NHANES 2003-2004 and 2015-2016.  
Food Surveys Research Group. Dietary Data Brief No. 20, November 2018.

# No Significant Change in Vegetable Intakes Between 2003-2004 and 2015-2016

Estimated Mean Intakes of Total Vegetables per Day by Age  
WWEIA, NHANES 2003-2004 and 2015-2016

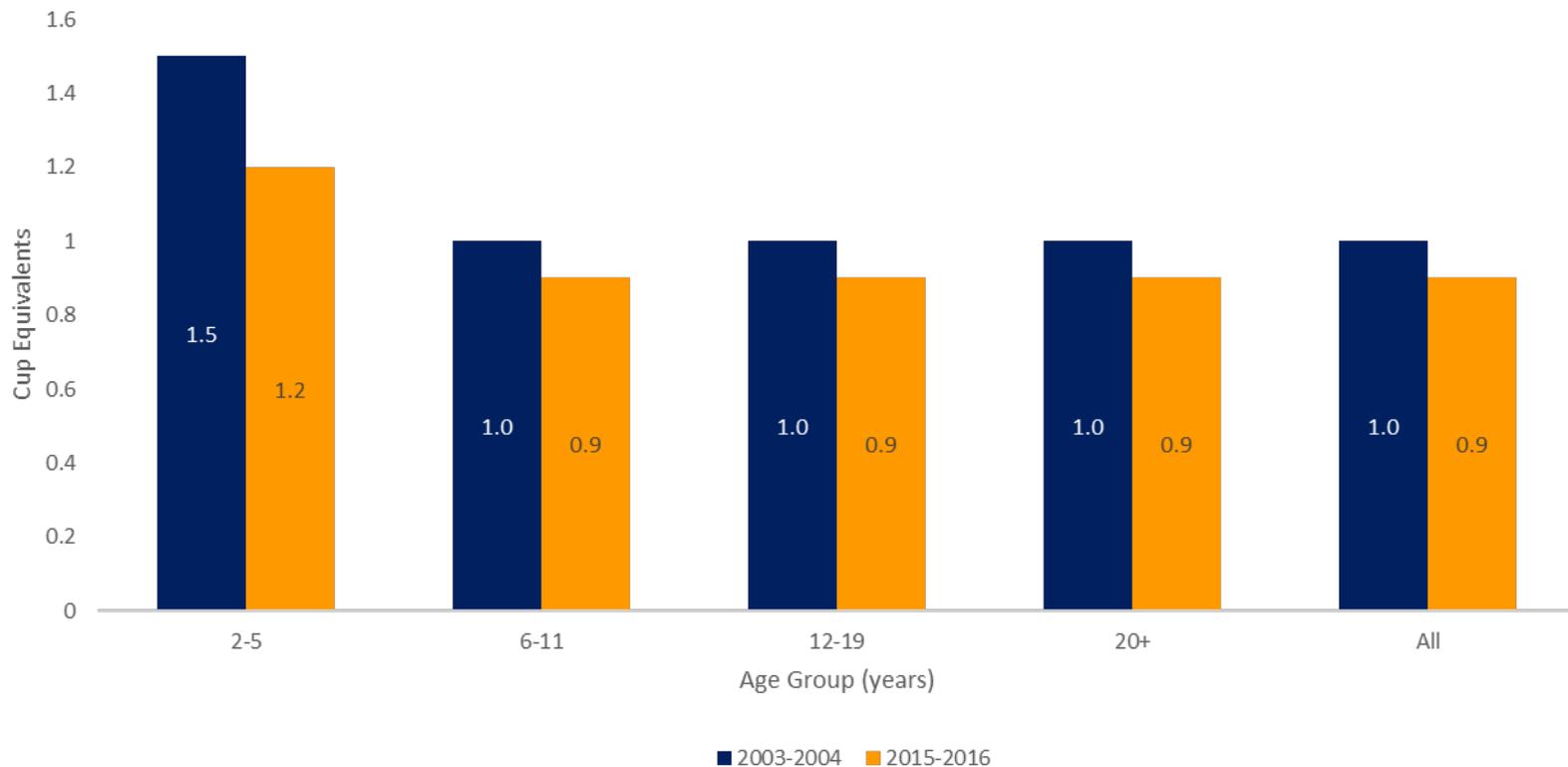


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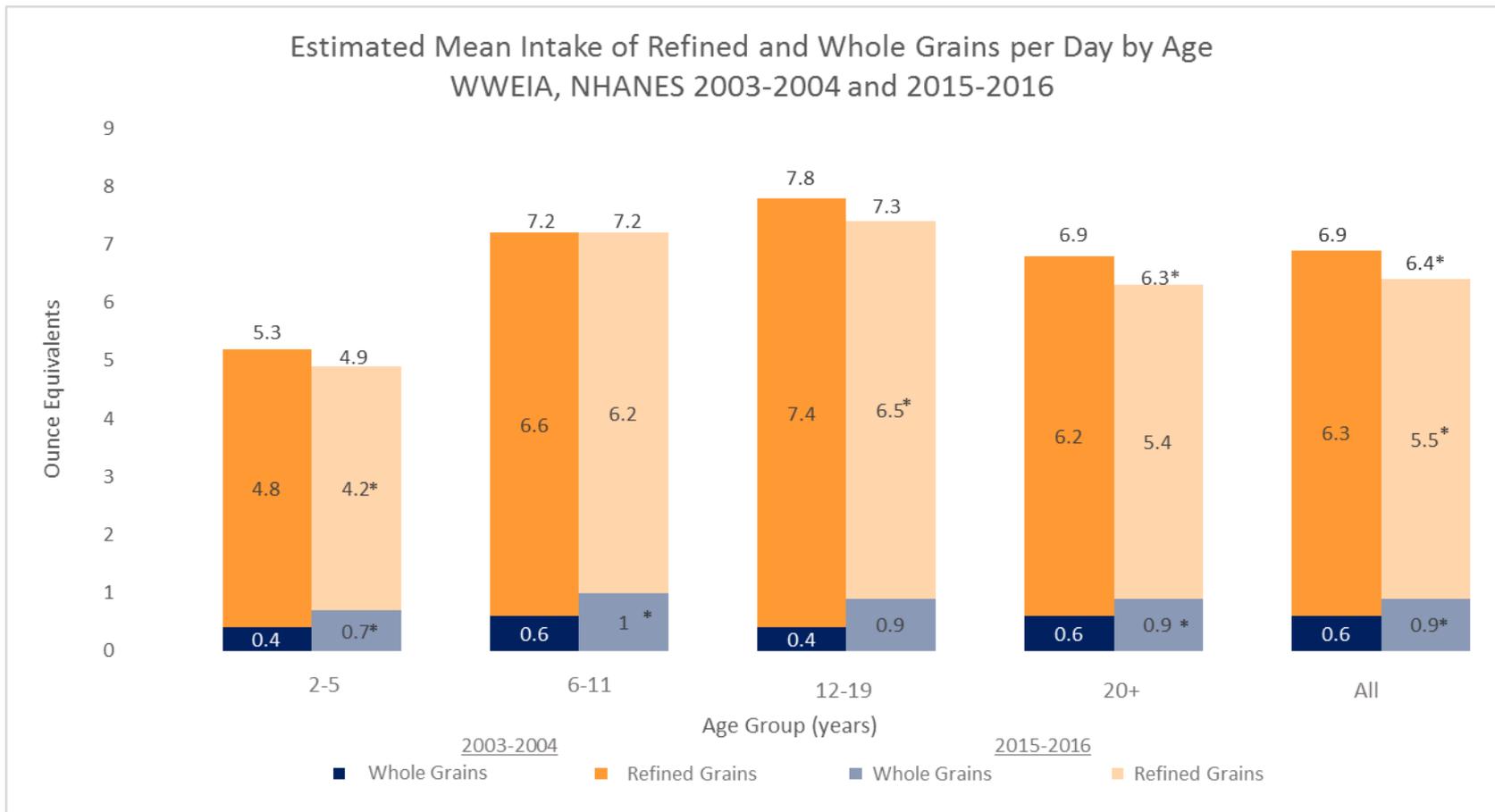
DATA SOURCE: What We Eat in America, NHANES 2003-2004 and 2015-2016, day 1, individuals 2+ years  
Bowman SA, et al. Food Surveys Research Group. Dietary Data Brief No. 20, November 2018.

# No Significant Change in Fruit Intakes Between 2003-2004 and 2015-2016

Estimated Mean Intakes of Total Fruits per Day by Age  
NHAWEIA, NES 2003-2004 and 2015-2016

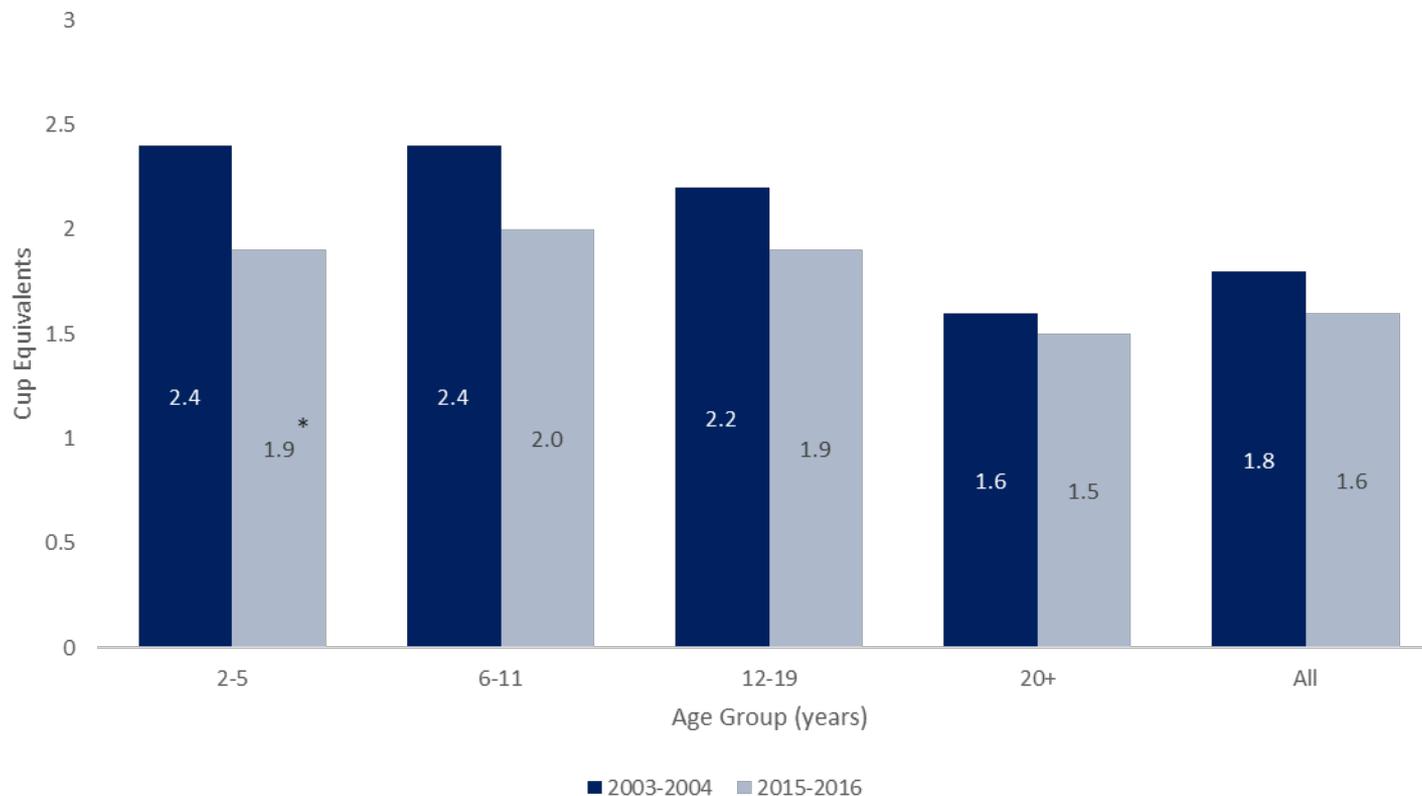


# Whole Grain Intakes Increased & Refined Grain Intakes Decreased between 2003-2004 and 2015-2016



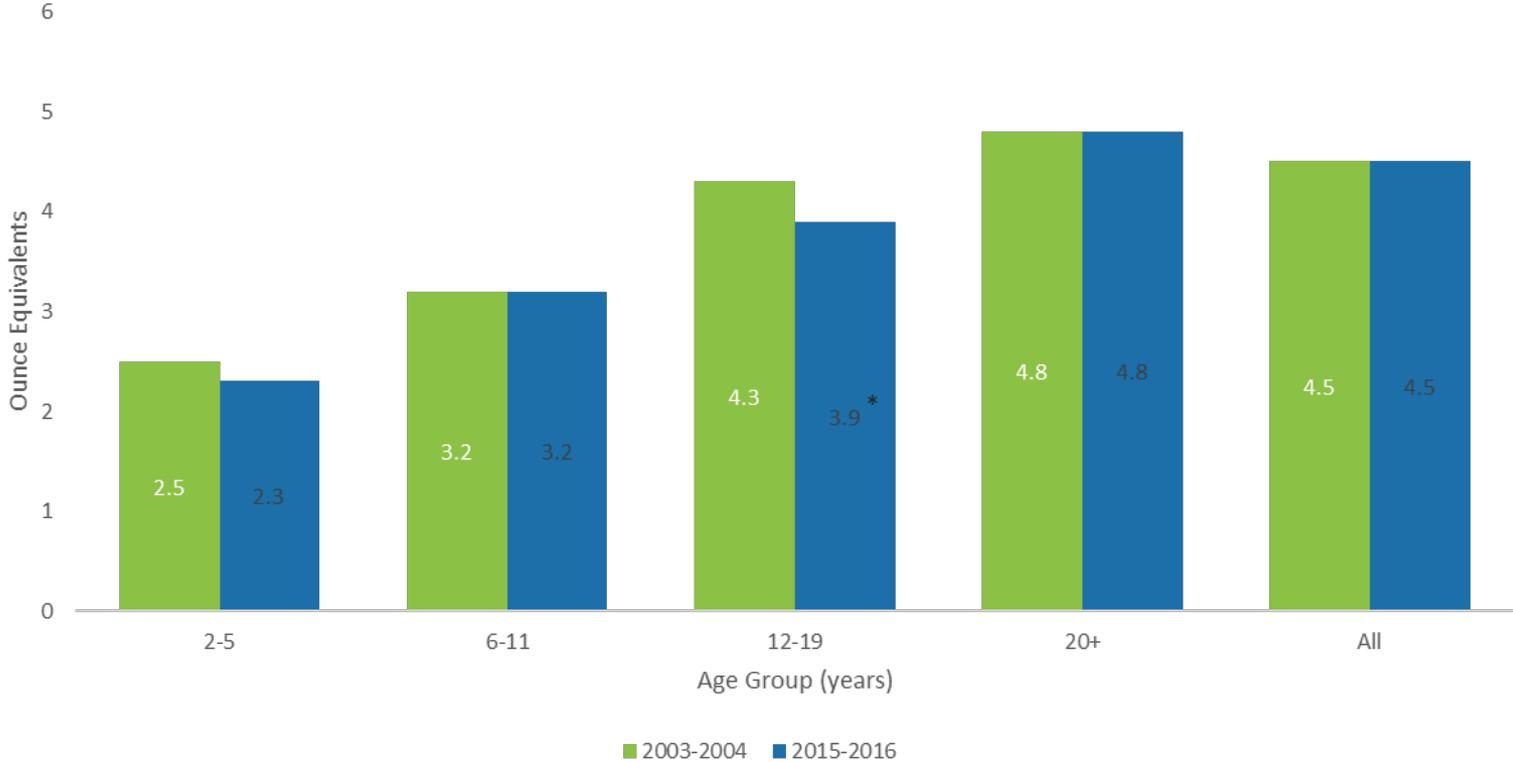
# Young Children Significantly Reduced Total Dairy Intakes Between 2003-2004 and 2015-2016

Estimated Mean Intakes of Total Dairy per Day by Age  
WWEIA, NHANES 2003-2004 and 2015-2016



# Adolescents Significantly Reduced Total Protein Intakes Between 2003-2004 and 2015-2016

Estimated Mean Intakes of Total Protein per Day by Age  
WWEIA, NHANES 2003-2004 and 2015-2016

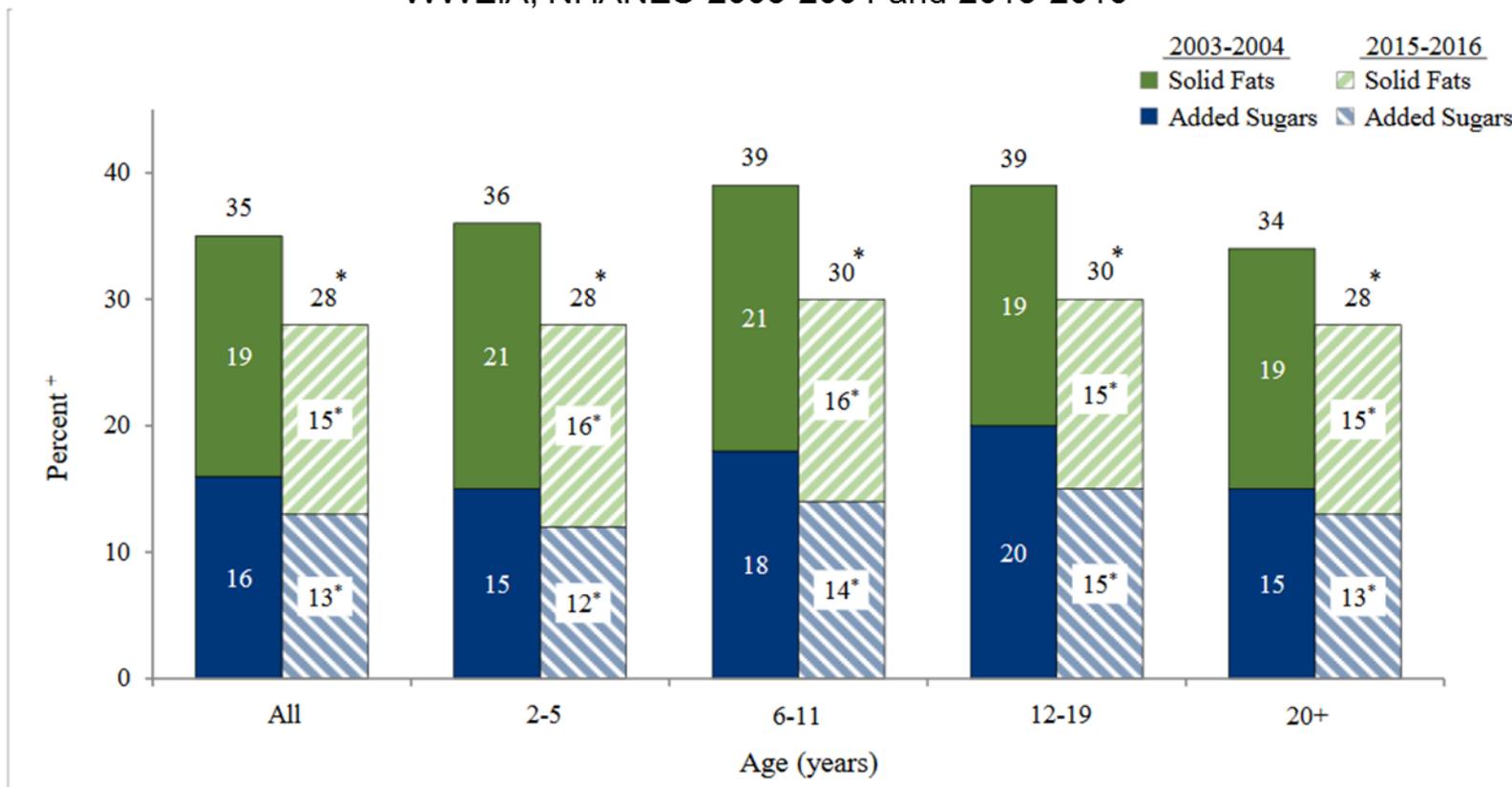


\*Significantly different from 2003-2004 (p<0.01)  
DATA SOURCE: What We Eat in America, NHANES 2003-2004 and 2015-2016, day 1, individuals 2+ years  
Bowman SA, et al. Food Surveys Research Group. Dietary Data Brief No. 20, November 2018.

# Percent of Calories from Solid Fats and Added Sugars Decreased Between 2003-2004 and 2015-2016

Estimated mean intakes of calories from solid fats and added sugars as percent of total calories per day, by age

WWEIA, NHANES 2003-2004 and 2015-2016



\*Significantly different from 2003-2004 (p<0.01)

† Percentages rounded to integers. Total percentages of calories from solid fats and added sugars are shown above the respective bar charts.

DATA SOURCE: What We Eat in America, NHANES 2003-2004 and 2015-2016, day 1, individuals 2+ years

Bowman SA, et al. Food Surveys Research Group. Dietary Data Brief No. 20, November 2018.

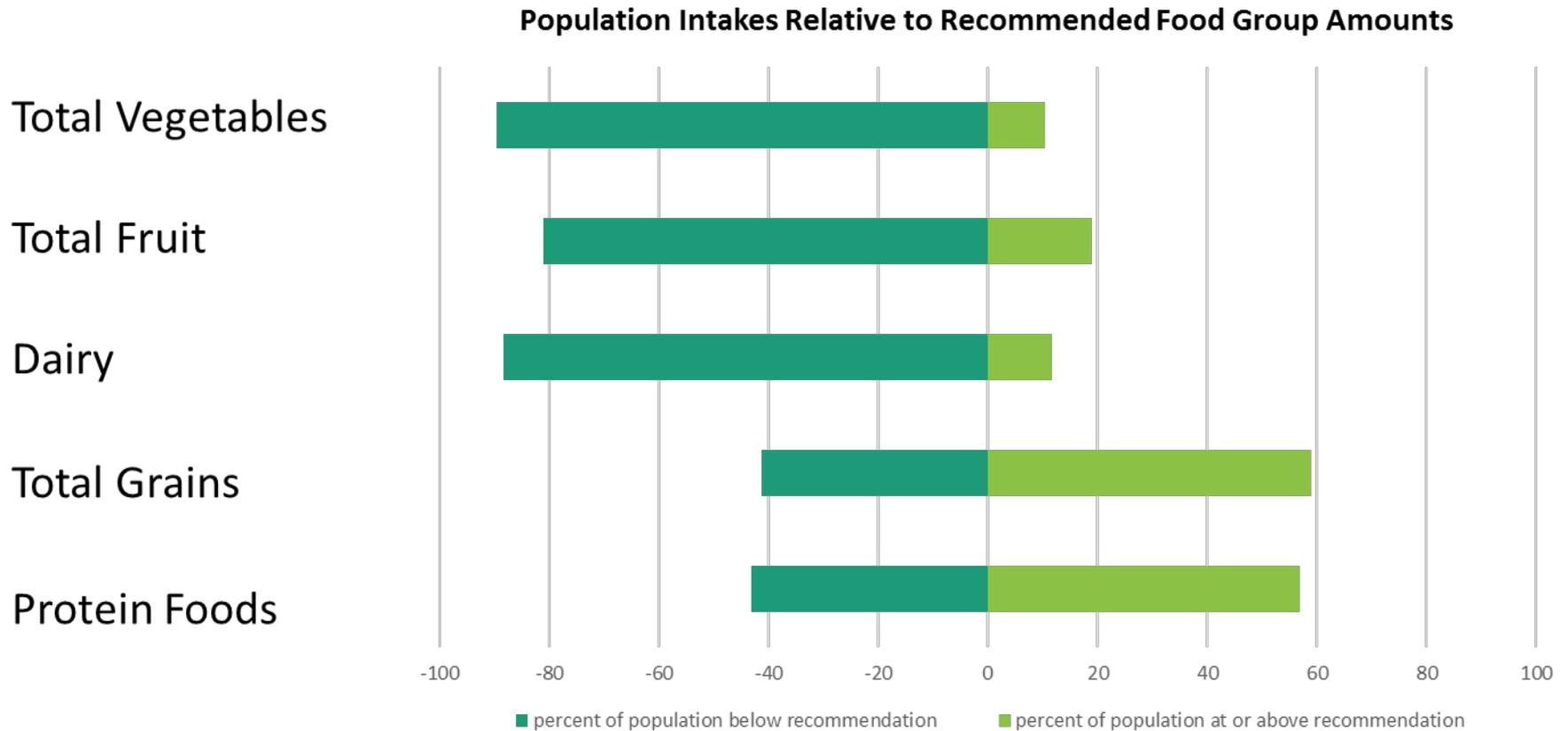


# Food Group Intake Distributions

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# Percent of Population Below or Above Recommended Food Group Amounts



**Data sources:** Preliminary analysis: Castenson, D, Dodd, KW, Parsons, R, Reedy, J, Shams-White, M, Wambogo, E. Usual Dietary Intakes: Food Intake, U.S. Population, 2013-16. HHS, NCI. 2019

USDA Healthy U.S.-Style Eating Style recommended intakes, which vary based on age, sex, and activity level for recommended intakes. 2015-2020 Dietary Guidelines for Americans.



# Food Category Sources of Calories and Food Groups

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# WWEIA Food Categories and Select Subcategory Examples

Milk and Dairy

Protein Foods

Mixed Dishes

Grains

Snacks and Sweets

Fruit

Vegetables

Beverages, Nonalcoholic

Alcoholic Beverages

Water

Fats and Oils

Condiments and Sauces

Sugars

Infant Formula and Baby Food

Other

Meat, Poultry, Seafood

Grain-based

Asian

Mexican

Pizza

Sandwiches

Soups

Burgers

Frankfurter sandwiches

Chicken/turkey sandwiches

Egg/breakfast sandwiches

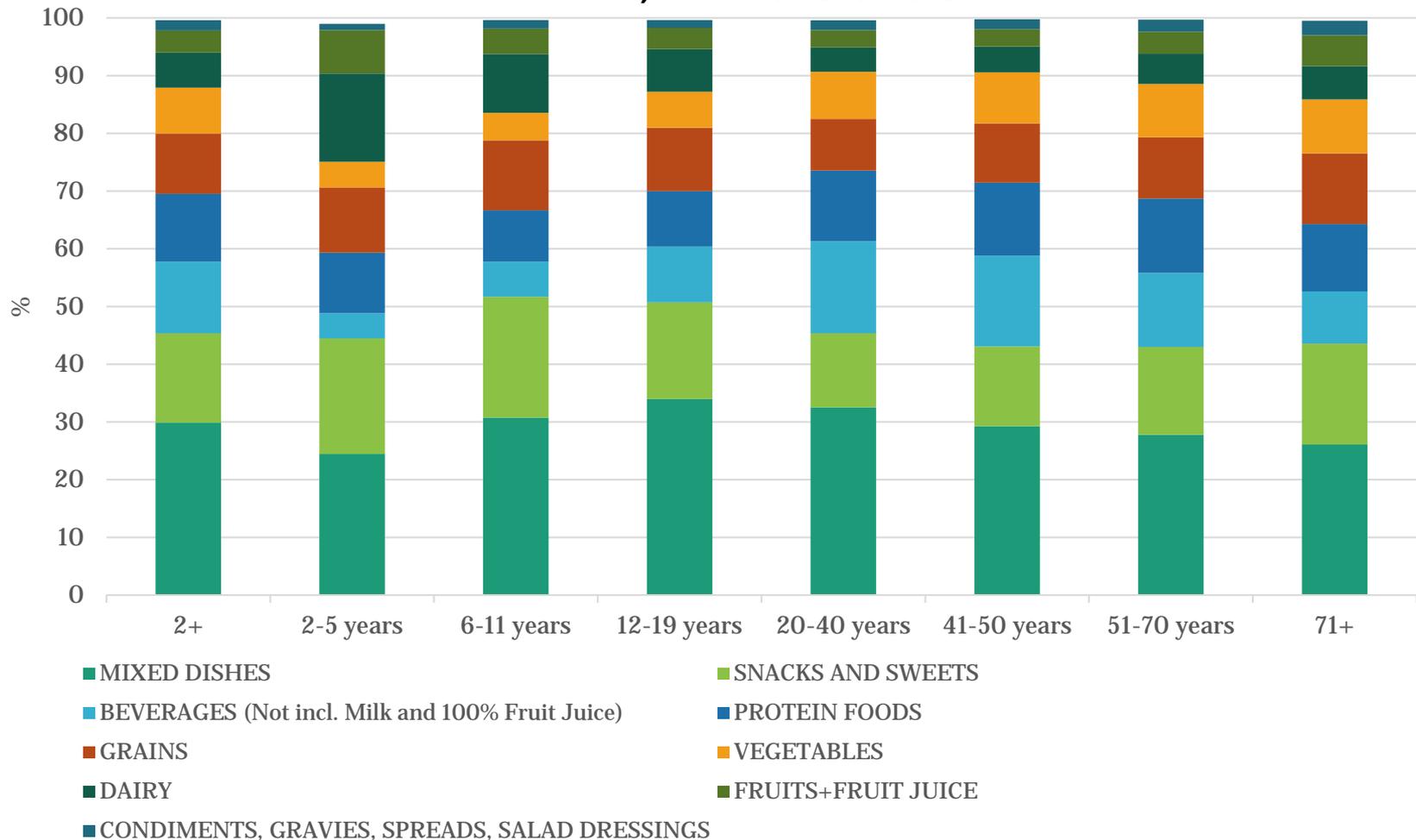
Other sandwiches

Cheese sandwiches

Peanut butter and jelly  
sandwiches

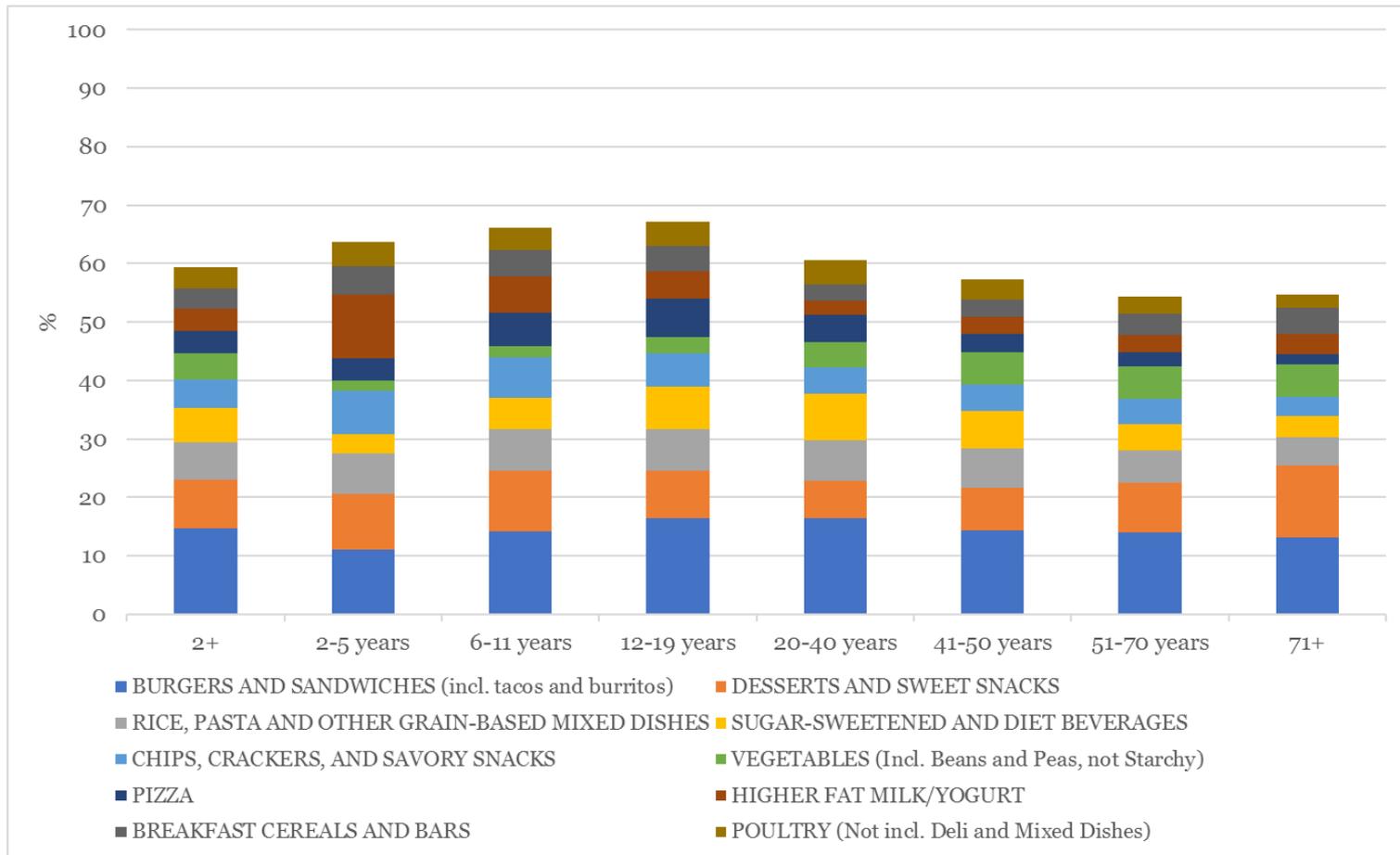
# Food Category Sources of Calories

**Males and Females - Distribution of energy intake (percentages) across major categories  
WWEIA, NHANES 2013-2016**



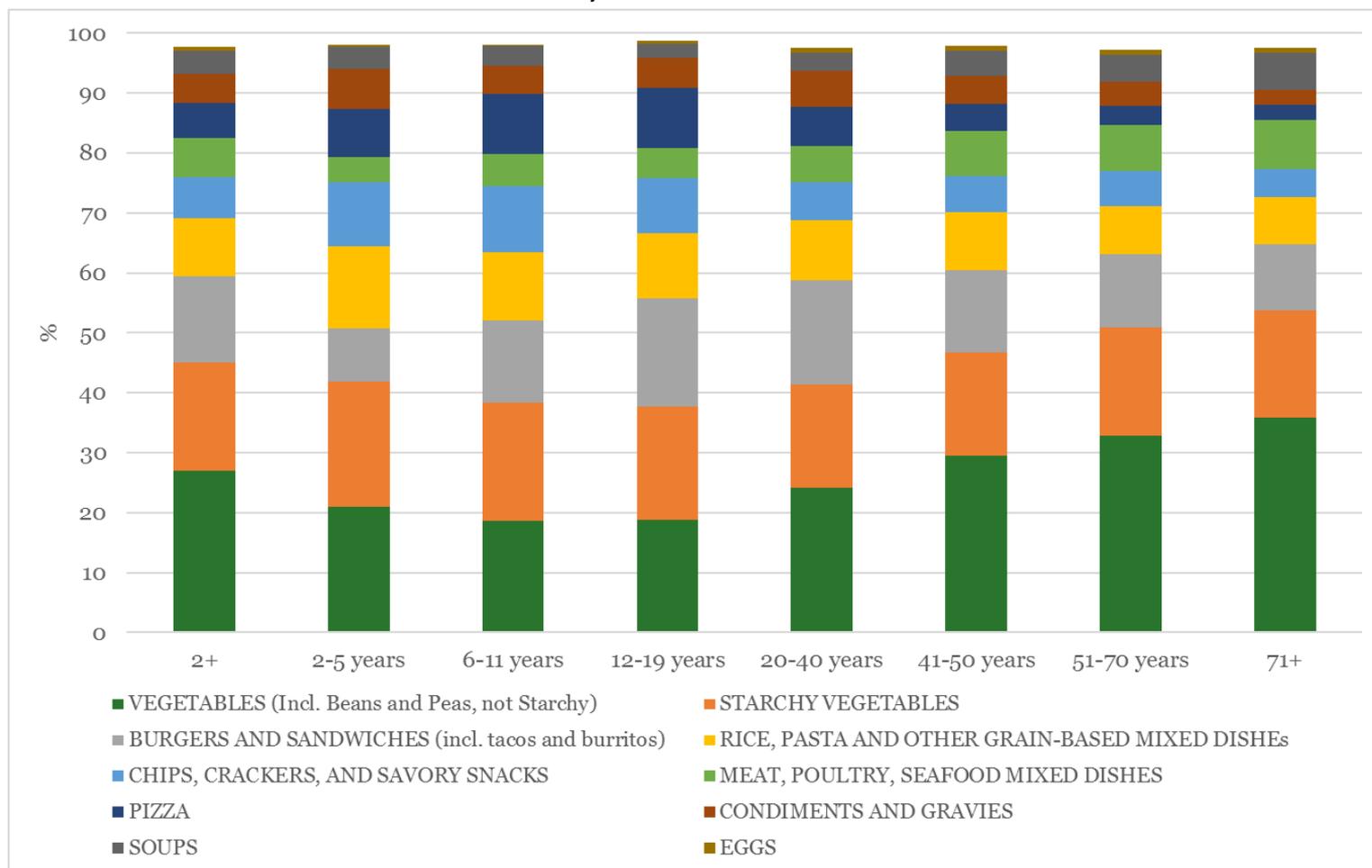
# Top 10 Sub-category Sources of Energy

**Males and Females – Distribution of energy intake (percentages) across top 10 sub-categories  
WWEIA, NHANES 2013-2016**



# Top 10 Sub-category Sources of Vegetables

**Males and Females – Distribution of vegetable intake (percentages) across top 10 sub-categories  
WWEIA, NHANES 2013-2016**



# Our Common Goal: Improving the Health of Our Nation

- What we eat and drink matters
- We still fall far short of eating according to the *Dietary Guidelines*

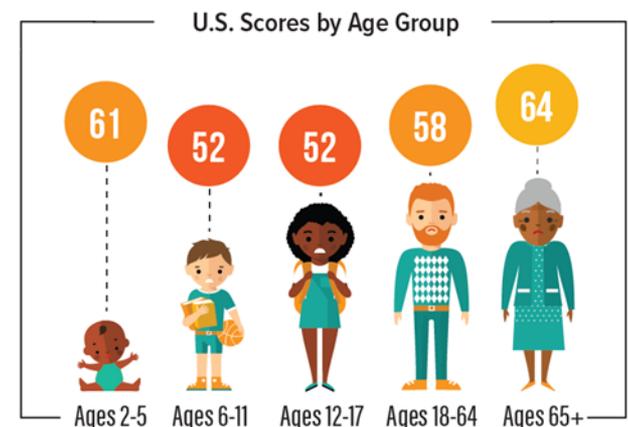
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**Data show that moving toward the Dietary Guidelines can have health and economic benefits**



**Dietary  
Guidelines  
for Americans**

